App F IX 4

1929 (Ml)

File No 293-29

Serial Nos 1, 2, 3, 4, 5, 6, 7

Previous References

Rnl 158-28 (1-2)

dB 55-47 (5-6, 8, 9 & 11

Later References

Rnl 256-32—16-6

Rnl 81-36-85 82, 106, 137, 143

General and Revenue Secretariat.

Serial Nos 7

Part B for September 1932

SUBJECT

Water supply to Holenarsipur

7) The D.C Hassan

L 2329 & 23-9 32

Requests him to ask the Rnl cl to send Sparate proposals in respect of the loans as regards repayment of interest & cost of Irrigation etc

General and Revenue Secretariat

2nd File No 293 of 192 9

Serial No	
1	Letter no 1007-29 dy 11-3-30 from the dep com, Hanam Refers to this dpt letter no L 3636/mk 152-28-2 dy 16-11-1928 communicating the orders of govt directing that the question of water supply to the Hobenaraspur Town by means of pipes might be deferred till the finances of the munpy improved and requests that a loan may be granted by govt to the mcl or they may be permitted to raise a debenture for financing the cost of the water supply project amounting to Rs 67000/- prepared by the Ex Engr, Dany & Town planning divn
2	1) The dep com had forwarded in oct-1928 for sanction a project for Rs 67000/- for water supply to the Hobenaraspur Town the ~~local~~ mcl were agreeable to bear one half of the capital cost of the project and the annual maintenance charges thereon amounting to Rs 3000/- The GC requested that in view of their slender resources, they may be granted a loan of a sum equal to their quota of contribution payable for the work out of state funds subject to repayment of the same in long term early instalments of Rs 12000/- per annum at a low rate of interest—

Note—Contn Sheet

General and Revenue Secretariat | 2nd File No 293 of 1929

Serial No

7) The financial secrt was of opinion that the mncply was not in a position to find ways and means to meet the maintenance charges of the water-supply Scheme and also to provide for the payment of interest and sinking fund charges In the circumstances, it was ordered in this office letter no 3636/ml 152-28-2 dy 16-11-28 that the Scheme may be dropped for the time being and the mncl were informed that they may renew their proposals after their finances improved

7 3) The dlp engr has now resubmitted the proposal He recommends that the request of the mncl may be viewed sympathetically and sanction accorded to the Scheme now that the mncl have taken needful steps to improve their finances by revising the octroi bylaws and introducing daily and weekly market-fees He considers that with the good prospects of realising more income, the mncl can bear the cost of the proposed water supply Scheme

4) The dlp engr now requests that in view of the slender finances of the mncl, a loan repayable in easy instalments may be granted by Govt or they may be permitted to raise a debenture for

Note—Contn Sheet

WD 066—GPB—80 000—26 7-29

Serial No

the purpose the addn mat- of the first should disturb that the supply of water by means of bore-holes would be a better proposition, the mld cl will have no objection to adopt- this either

5) The Budget Estimates- when mlcl are put-up the normal expenditure is below the normal income but the closing balance is less than the prescribed minimum The mlcl have got- an investment of Rs 30000/- in State loan bonds

6) The proposal may perhaps be over for the present and taken up for consideration after orders are passed on the budget- Estimates- when mlcl for the next-year, coming up shortly

7) Laid for orders

Recd
25 3 30

8) The project amounts to Rs 67000 for a Small Cl like the Narasipur is large Compared with their annual revenues The Council has not got ready money & has to raise a loan It is doubtful if the Small Cl Can raise a loan for Rs 35000 which will be their share of Cost—

Note—Contn Sheet

Serial No

9) Mr Pelley has already remarked that the Municipality will not be able to meet the cost of maintenance charges & interest and sinking fund charges on the loan in full as against Rs 6000 odd the annual income anticipated from additional houses would be about only Rs 4000 and there is no certainty that the Municipality will be able to realise as much and the question of borrowing can be favorably considered only when the accounts of the Municipality show such an enhanced income It may not be safe to act upon mere anticipations

10) Even supposing that the Municipality's anticipations prove to be correct, we have to consider the financial condition of Govt to meet their share The Finance Dept wants that all additional items of expenditure should be deferred or reduced for 1930-31 and Govt may not therefore be able to provide adequately for the supply in Dindigul Registry as

Note—Contn Sheet

WD 066—GPB—80 000—26 7 29

4463.

App F III—2]

General and Revenue Secretariat | 2nd File No 293 of 192 4-36

Serial No

11) Considering all this, it may not be from the first to sanction the scheme whether this year or next year. This can only be considered in 1937-38 after the financial condition of the first 2 the Council & press the Sabarmati Scheme & do the scheme has to be over in about 2 years.

12) Meanwhile the Municipality may consult the Chief Engineer about the Khanpur and accumulate money from all possible sources, including increased revenue from anticipated and if they consider that there is dearth of water and some provision should be made for adequate water supply they may send up further proposals for one or 2 boreholes which could be met from their own resources.

7269/2613

13) 2nd Alternative 2573.

14) A bore hole scheme may also be investigated - It will save the cost of the filters & the pumping arrangements may be simpler. One bore hole may be used in a suitable place & the quantity of water it will give ascertained.

Note—Contn Sheet

WD 666—[illegible]—50,000—20-7-[illegible]

15) Meanwhile the income from the new taxes may be watched &

(6

General and Revenue Secretariat

Hdqrs App F III—2]

ML File No 293 of 1929

Serial No

10) Evidently the present financial position is better than in 1928 & if the expectations are realised & an addl income of nearly 12 crs is obtained the Govt can certainly go in for a suitable scheme of waterstaff. The Ch Engr may be consulted & if he also thinks favourably of a borehole then DY & YE may be consulted & the min[imum] asked to try a borehole.

CSM
28/3

Rep 112/29-30

11) Forwarded unofficially to the Chief Engineer of Myson for favour of opinion

28/3/30

By order
D Sankaranarayana Iyer
for Secretary to Govt

Note—Contin Sheet

Serial No

o 2424/304/30

(18) Returned, with compliments, to the General Secretary to Government

19) 2 As the municipality is not in a position ju at present to finance the pumping scheme from the river, the best course is to try bore-holes either within the town or at the outskirts In the latter case, it would be very inconvenient for the people, as they will have to go a long distance to fetch water or water will have to be pumped from the bore-hole to a higher place in the town This would nece sitate more than one bore-hole as the quantity avail-able from one would be limited The proposal would then become costly and complicated If the bore-hol are within the town, they will be deep and will have to pass through rock The cost of each borehole wil be about Rs 2,000 for a depth of 150 feet The wate can be pumped from it to a galvanised iron or rein reinforced concrete tank close to the bore-hole fitt with taps The cost of pumping plant and the tank will be another Rs 2,000 Thus for each bore-hole the total cost would come up to Rs 4,000 At this rate, the municipality may put as many bore-holes as they can according to their resources This appears to be the best and cheapest way of dealing with the water supply situation of Kolar-Varsipur town at present The matter may be referred to the New Bureau of Sanitary Engg?

RG 9/5/30

A

29/4/30

Chief Engineer of Mysore,

Bangalore,

April 1930

20) The Member for

21) Ch Sg.

RG 9/5/30

22) Done

RG 9/5

13/5 RG

4304/2/4

Note—Contn Sheet

8593

13/5

WD 066—[illegible]—80 000—26 7-29

General and Revenue Secretariat | File No 293 of 1929

Serial No

24) For orders whether the bore may be referred unofficially to the Bureau of Sanitary Engineering or an official communication has to be made to the Bureau on the matter.

16/5/30

25) Forwarded unofficially to the Director of Health for favour of information and with the opinion of the Bureau of Sanitary Engineering

By order

for Secretary to Government

20/5/30

25) Returned with compliments to the General Secretary to Government

26) In view of the municipality of Hole Narsipur being unable to finance the larger scheme at present I am in favor of the Chief Engineer's recommendation regarding the installation of bored-wells unless there is a possibility of utilizing the river water conveyed to the town in the irrigation canal

27) As soon as the opportunity arises, I shall make a study of the river water to determine the period of sedimentation of the combinations of

OFFICE OF THE DIRECTOR OF PUBLIC HEALTH
Bangalore dated 21 5 1930
G No 2061
File No
Dispatch

NOTE—Contn sheet

Serial No

chemicals required to clear and sterilize the available river water and shall report on same

OFFICE OF THE SEC M 6 JUNE 1930 No. G.P.O. 25—

31/5/30 D J Muldays Rockefeller Foundation Sanitary Engineer

28) Submitted to Government with Sanitary Engineers opinion

Dir of Health 31/5/30

29) 2nd Member

30) Seen

31) One or two bore holes may be used in suitable places

32) The further report of Mr Muldoon may be awaited before any decision is reached in regard to river supply from the river.

33) Chief Secretary for appeal

34) Issue

2 A.G.G. Note L.C. Centre

WD 01684—GPB—30 000—20 4 29

2 No X 150 3 CS 16-8-30 To CE, Harbour Master Karachi with one or two boreholes may be tried in suitable places for the present the result obtained by

4463 h

App F III—2

General and Revenue Secretariat

File No 293 of 1929-30

Serial No	
	35) Please send enquire of what was further required of the Survey Engr R.Fs may be called
	MW T V J 16/6/31
	36) Draft subd 18/6/31 37) Issue 19/6/31
	To Mr J J Meldazis Banerahe
3	Do no L10102 of 23/6/31 Calls for further report regarding the Water Supply to Kole-Kanaipur Town
	To Do - Do no L1609 of 3/9/31 Reminder - From Do - No Do S.E 2710 of 8/9/31 States that the Water Supply Scheme is expected in a few days & will be forwarded early
	38) This is only an ad-interim report Final report will be awaited 39) Await 11/9/31

Note -Contn Sheet

WS 02898—GPB—10,000—22/4/30

File No | of 192 | General and Revenue Secretariat

Serial No	Note–Contn Sheet

1645
2

(11)

App F III—2]

General and Revenue Secretariat

(File No 293 of 1929-30

Serial No	
4	From Mr J J Nieldagis D.O No S-E 3128/19-9 1931 Forwards a "Water Supply Scheme" for Kalemarsipur Town involving the use of Hydraulic Rams
	40) The report accompanying the scheme explains clearly the facts of the case The scheme now received costs Rs 62460 including Rs 2539 for contingencies at 5% + 500 + tools & plant charges at 18% which comes to Rs 9140
	41) The scheme has to be financed by Govt in the first instance, as the Narsipur Municipal Council are pressing for a loan for this purpose from October 1928 In the present financial condition it may not perhaps be possible either to contribute or grant a loan for the purpose Reference is invited to the concluding portion of Dy Comrs letter dt 11 3 30 wherein the Dy-Comr recommends that the MC may be permitted to raise a Loan, in case a loan

Flag A

Flag B

Sl eet

WD 0 553— 0 000—GPB—8-7 30

1445
h

Mcl File No 293 of 1929-30 General and Revenue Secretariat

cannot be given by Government
Subd for orders
Hbb 24-9-31 42) H Secy may be consulted.
VS 24 9 31
43) Gen-Secy)

GENERAL SECRETARY
24 SEP 1931
No

44) H Secy's draft
Complete
5/10
VS

45) I am afraid it is not possible for Govt to pay any retrenchment allowance under present circumstances
h
21 / 21

H 1190/6-10-1931

GENERAL SECRETARY
OCT 1931
No

46) What can be done when Govt will be raising a loan for the purpose & proposes to repay it
10 Rs
29/10
VS
23.10.31

47) Draft enquiry subd -
Hbb 23/10/31 MR
Issue
VS 23 10 31

To The Dy- Comr, Hasseendeshu
No: L 315 Dated 27 10-31
Calls for further particulars in the matter

Secy A

Serial No	
6	Letter no C307/31 dated 13/6/32 from the Deputy commr Hissar district forwarding the information called for 1/5 The mcl have resolved that they may either be granted a permitted to float a loan of Rs 60,000/- for town water works repayable in 25 annual instalments at a rate of interest not exceeding 6% per annum ii) That the Govt to guarantee the interest and to declare it free of income-tax iii) That Govt be required to pay their quota as early as possible or by convenient instalments and iv) that the Govt grant be ear-marked either for repayment of the loan by a yearly annual drawing of the bonds by lot or for other items of permanent town improvement such as drainage works and v) that a water tax be levied to repay the loan instalments etc 5) The Dy Commr recommends that the loan of Rs 60,000/- may be granted as the finances of the municipality are in a fairly satisfactory condition 5) From the sometimes budget Estimates give below, as framed for 1931-32, it is seen that the

NOTE—Contn Sheet

Hoshangabad Water Supply
(503)

Mil File No 293 of 1929 | Central and Revenue Secretariat

financial portion of the Canal is as follows

opening balance Rs 5,420

Receipts

Normal 27,375
Special 4,281 } 31,656

Kag J

Total 37,076

Expenditure

Normal 21,853
Special 10,000 } 31,853

Closing balance Rs 5,223

52) The normal expenditure is within the normal income and the closing balance falls short of the prescribed minimum

53) ~~Estimates worth reference to para 46 supra~~ The Mill is built the loan for a period of 25 years at a rate not exceeding 6%

55 / 29 to 32 The normal income of the Mill exceeds the normal expenditure by Rs 6,500

The income is estimated to cost Rs 62,000 If the Govt were to give a loan of this amount at 6% interest for a period of 20 years on the ground that 25 years is too long a period, the amount to be converted to a sinking

Serial No

fund may be about Rs 6,200 @ x 8 1/8 or Rs 5,100 a year from which the whole or part of the amount is to be taken as a loan to the municipality, and the yearly share of the instalments or charges; the finances of the municipality being carefully considered. No information is available as to the probable amount that may be required for forming the water and it may be met from the water fund proposed to be raised (Rs 1,500)

54) Submit with reply to para 4(b).

Rs 27/6/32

53- The Fin'l Secy might be consulted

28/6

56 For favour of remarks (Fin'l Secy)

Fwd by Mr Watts

28/6/32

57 The amount required for the work is 62,000 Rs. There is no provision in the Budget for the Board of Loans to Municipalities. The small provision made under for grants to Municipalities for Water Supply is barely enough to

GENERAL SECRETARY. 28 JUL 19 No.

H 5535/30 6 32

NOTE—Contn Sheet

WD 0 553—1000—GPB—8-7 0

meet- Existing Commitments
So it is not possible to give
Either a loan or a grant from
State funds-

21 7 32

GR Secy)
With Compts)

58) I am afraid the
matter has to be dropped

30/7/32

II nd Member

59) I should like whether the views of the
Finance Secy regarding the proposal that
should that the Govt borrow Rs 60 crores for the
purpose at 6% interest free of income tax
- the first instalment being found in
the current

1/8/32

Fin Secy) 1/8/32

GENERAL SECRETARIAT
30 JUL 1932
No.

W & M 7C 55-35-31

30 JUL 1932
966

FC 313 32 A 28
1 Food Grains Policy
Govt of India Inward No.
Request to defer for consideration
of five years
2 Loans are already given
Short term loans in 8
cases

Hole - municipal water supply scheme

[App F III—2

General and Revenue Secretariat — File No 293 of 1929

Serial No

60) If the Municipality are willing to and can float a loan and can wait for the receipt of the Government grant till such time as Government can afford to give it there is no objection to them being permitted to raise a loan for financing the water supply scheme

I do not know if Government can allow such Municipal loans to be free of income-tax The general order on the subject has to be applied in this case

H 313 32

6 9 32

61) Please put up Cross ref to A above

7/9

62) The income-tax section may be requested to put up the orders, if any, on the subject

7/9/32

63) For kind compliance
The Branch)

7/9

64) Vide pp 86 of 9 T Manual - Please see the Records Nos IVs Fl 7955/9 T 48-29-2 & 31-5-1930 on the subject

12/9

(Copy furnished) Page K

65) Copy of the Income-tax manual containing the Note you may please put up

14 9 32

66) The Concession given in the following 31 5 30 expired on 1 7 32 Has the period been extended?

67) The Financial Branch may be requested to note on the point referred to at Para 66

The Br will comply)

15/9/32

NOTE—Contn Sheet

(68) 15/9/32 Rules Extended till the end of June 19 vide Nos IVs Fl 7237/9 T 27-34 dated 1932

read 16/9

16/9

WD 70—GBPM—50 000—13 8 31

L5787

File No 293 of 1932 | General and Revenue Secretariat

69) Submitted with reference to Para 66

70) Reference order in para 59 supra

II Members) 19/9

19 SEP 1932
No. 2342

71) I apprehend the Trustees & DC may be informed accordingly & asked to send up specific proposals in respect of the loan re interest, sinking fund, period of repayment &

by
20/9/32

72) Agd

73) Submitted with a draft

21/9/32

74) Issued

Issued vide 2329 of 20/9/32 to DC Hassan

Requests him to ask the Board to send specific proposals in respect of the loan as regards repayment, interest, period of repayment etc

22 SEP 1932
GENL & REV SECTT

ml 293-29-1

Tel Address —Depcom Hassan

OFFICE OF THE DEPUTY COMMISSIONER
HASSAN DISTRICT

In reply please refer to
No C 1007-29
Encl 1 Copy of the letter dated 17th

Dated Hassan the 11th March 1930

GEN & REV 4463
13 1 30

From

S ABDUL WAJID Esq B A
Deputy Commissioner, Hassan District

To

R RAO G RAO, Esq , B A , B L ,
General Secretary to Government,
B a n g a l o r e

RD 13/30
MR AR
45 153

Sir,

Adverting to your letter No L 3633/ 1 152-28 dated 16th November 1928 communicating the ordersof Government directing that the question of water supply to the Holenarsipur Town by means of pipes might be deferred till the finances of the local Municipality improved, I have the honor to submit herewith for favour of orders of Government a copy of letter No H C 75/29-30 dated the 1st March 1930 from the President of the Holenarsipur Municipal Council along with the vernacular correspondence on the subject

2 I quite agree with the Municipal Council in thinking that a regular scheme for supply of water to the town by pipes is very necessary and urgent and may be sanctioned As the President reports, the Municipal Council have since taken needful steps to improve their finances ~~as the Government~~ They have revised the Octroi bye-laws, and introduced daily and weekly market fees Daily toll has also been levied and the revenue has considerably increased and there is scope for better revenue under proper and efficient supervision It is no doubt true that the Municipal Council have heavy commitments on account of medical and educational institutions established within the municipality but I

I have every hope that with the good prospects of realising more income, the Municipal Council can bear these changes and the cost of the proposed water supply Scheme At present, the Municipal Council have not got sufficient balance and ant financial help They request that a loan may be granted by Government or they may be permitted to raise a debenture for the purpose According to the Scheme already got up by the Executive Engineer Sanitary and Town Planning Division, the cost of the water Supply project is estimated only at ₹ 67000/- which is not much If the Government should think that the supply of water by means of bore holes would be a better proposition the Municipal Council will have no objection to adopt this either

3 In thes circumstances I strongly recommend that the Govt may be pleased to view their request of the Municipal Council sympathetically and accord sanction to the Scheme, the samebeing financed partly by Government and partly by the Municipal Council and a loan from Government repayable in easy instalements granted to meet the Municipal share of the cost of the project In case a loan cannot be granted by Government, the Municipal Council may be permitted to raise a loan for the purpose As the Municipal Council are however anxious to start the work this year alone, I request you to place the matter before Government fortheirvery early favourable orders

I have the honor to be,

Sir,

Your most obedient servant,

R. S. Kramay

~~Deputy Commissioner,~~

Hassan District

Acting for H. D. C.

Letter No H C 75/20-30 dated the 27th/1st March 1930, from the Town Municipal Council, Holenarsipur, to the Deputy Commissioner, Hassan District

---

Re - the water-supply scheme to the Town of Holenarsipur

In submitting herewith the entire records connected with the above scheme along with a copy of the latest Resolution of the Municipal Council, I beg to submit the following facts for your kind consideration

Though the Town of Hole-narsipur is situated on the banks of a river, thepeople will have to struggle hard even to get a pot of drinking water Almost all the wells have got only brackish water and the drinking water will have to be brought out from the river, from some places it will be more than a mile to the river The people are put to unbearable difficultires during the summer months of the year There will be no water in the canal during these months and owing to the high elevation of the town, all the wells get dried up very soon and every pot of water to be used for drinking, bathing or washing purposes is to be got from the river only The hardship is thus unbearable and it is the duty of the Municipality to relieve the poor people of their suffering

Having imposed so many new taxes, by the introduction of Toll, new Octroi, market and so many other bye-laws and having increased the Municipal income by about 8 or 10 thousand rupees and having made the rate-payer pay so heavily, it is but right that we should given them more facilities; the question of water is a necessity and not a luxury

Secondly, the Extension-scheme- over which the Municipality have spent over 12 thousand rupees cannot be successful without the introduction of this water-scheme

It can, therefore, be seen that there can be no two opinions about the necessity of the scheme and the people are eagerly looking for and to the introduction of this useful scheme

This scheme has been in contemplation for over twenty years and in 1917 one was actually drawn up and estimates prepared but was eventually given up, probably owing to the slender resources of the Municipality

The Local Municipal Council was all along agitating for this scheme when the agitation took a final shape in their address in 1926 to our Dewan Sahib who was pleased to express his desire to help the municipality in their laudable idea of helping the suffering people The representation to the Dewan Sahib had its desired effect and the Sanitary and Town Planning Engineer visited this town and in 1927 drew up his scheme costing Rs 67000/- and the scheme along with the various resolutions of the Council together with the kind recommendation of the Deputy Commissioner was submitted to the Government for sanction, the Municipality requesting the Government to grant them a long term-instalment-loan to enable them to pay their quota i e , ½ of the total expenditure The Government were however pleased to order that the request of the Council might be renewed when their finances improved, hinting thereby that the Municipal finances then were not satisfactory enough to warrant the launching out of such a costly scheme

It will be seen from the records that the average income of the Municipality for five years ending 1927 was only yearly Rs12000/- with an expenditure of nearly an equal amount and so, the Government opined that the introduction of pipes might be considered when the resources of the Municipality improved I want to show now that the finances have considerably improved since the last order of the Government and that there is no danger of passing the safety line if we inaugurate this scheme now From a perusal of the Municipal records I am able to state that since the Government passed their

their order i e November 1928 there has been a very substantial increase in the income of the un cipality The introduction of the toll has brought in Rs 5800/- (approximately) during the year, Owing to the introduction of the new Octroi Bye-law and vigorous su ervision (and looking at the Octroi collection during the seven months of the years) it can safely be assumed that there willb e an increase of at least two thousand rupees over that of the previous years under this one head The introduction of the License fee has brought in Rs 200/- andthe Daily and Weekly Market Bye-laws have already beens nctioned by the Govennment and will be shortly introduced and the reaslisations may in all probability come up to at least Rs 1500/- Thus the increase of this year's income over that of last year (when the Government passed the order in question) is nearly Rs 10,000/- thus bringing the normal income to Rs 22,000/- Practically speaking, the income is nearly doubled and this seems to be a substartial reason for renewing our proposal this year and requesting you to submit our proposal to the Government with your wholehearted and strong support

The Government may consider that the unicipality is of late committing themselves to costly schemes But my submission is that it is not so, with the increased income of Rs 10,000/- a year and with the probable reaslisation of 1500/- as ater-cess, the only new commitment has been the Maternity Hospital to ards which we have been paying only a 1000/- The High School being practically self-supporting

So, the recurring expenses of 3000/- for the scheme can be easily met from the normal income, and at least Rs 1500/- towards the principal can safely be paid annually from an increased income of nearly Rs 11,500/- The Municipality is,of course, not in a position to pay up the capital outlay now As we request d the Government

before, they may either grant the unicipality a loan on the terms previously submitted or give us permission to launch out a Debenture loan- with the Covernment guarantee-repayable in about 15 or 20 year

Having now shown the capacity of the Council to launch out and main ain the scheme, it may be submitted that it is the duty of the Municipality to look to the convenience of the people and try to increase their comforts along with the increase in their burden Now, they pay to the unicipality so much more than they were paving hith -to and the unicipality would fail in its duty if it does not launc out anyscheme of Public utility urther, it is my idea that the Government also- as also the Local Bodies may not like the idea of the accumulation of funds in Local Bodies especially when there are so many legitimate arts of the people which are not yet attended to

he Council ho ever are not anxious to copy the scheme of Mr arker out and out f it seems desirable, a Hydrolic-Ram may be installed in place of the plant sug ested by the own Planning Engineer here seems to be one distinct advantage in the introduction of the Hydrolic-Ram in that, it saves the maint nance cost recurring cost to a very considerable extent Experts may, however be consulted in the matter and the bett r of the two may kindly be introduced It may, ho ever, be sug ested that the introduction of the Hydrolic-Ram is not practicable It has to be installed either at the Dam or at the channel near the own he Dam is too far and to bring in pipes from such a distance would be too costly, if it is to be installed at the Channel, ater will have to be running in the channel all the twelve months and there will be no scope for sil clearing and channel repairs, and so the idea of a Hydrolic-Ram may not be practicable and eventually r Marker's scheme only will have to be introduced

hus,

Thus, bringing to your kind notice the desirability and the urgency of launching out this scheme, the very great increase in unicipal finances hen compared with the years 1927-28 and 28-29 (when the Government passed the order in question) and the substantial reasons for renewing this request, I, on behalf of the Municipal Council, would earnestly request you to give your very strong and valuable support to this popular and useful scheme and send up your very strong recommendations to the Government bringing to their kind notice the improvement in the financial condition of the Municipality and thus earn the everlasting gratitude of the unicipal Council and the teeming thousands of Hole-narsipur

---

" Copy "

K S Thammaya

Deputy Commissioner,

Hassan District

Appendix F G—1

SUBJECT

Section 2nd

File No 293-29

Serial No 2

No L 1503

Records

Diary No of letter replied to

General and Revenue Secretariat

( )

the *193*

To

The Dy. Com.,

Haroun St—

Date of issue 16/8/30

Sir

Signed by W. H. S. Sastri

With reference to your letter no 1007-29 dy 11-3-30 regarding water supply to Mohammadpur Town, I am directed to state that one or two borewells may be tried in suitable places for the present and the result reported for the information of Govt. The records I have called for and received with your letter are returned herewith.

List of enclosures

Copied by

Examined by

Yours obedt Servt

8/30

for Secy to Govt

11/8/30

[over

Appendix F G–1]

SUBJECT

Section ML
File No 293-29
Serial No 3

Diary No of letter repl ed to 4463/L

No L 10102 & one

To

J J MacGregor Esqre
Sanitary Engineer
Rockefeller Foundation
Bombay

General and Revenue Secretariat

( )

thc 193

Date of issue 23/6/1931

Signed by Mr V-S Sastri

< copy enclosed for information

Dear Sir

I invite your kind reference to your unofficial Note dated the 31st May 1930, promising to send a further report regarding the Water Supply to Hole-Narsipur Town and to enquire when the report may be expected to be received in this Office

Yours sincerely

V S
19 6 31

List of enclosures

Copied by

Examined by

Offg
18/6/31

M1293-29-4

GOVERNMENT OF MYSORE

DEPARTMENT OF HEALTH

BUREAU OF SANITARY ENGINEERING

KARVE MB ClB DPH
Dect fH lth

H F MARKER Esq LCE MR S n I
Exe ut S n t y Eng ne

J J MIELDAZIS BScCE
Rock f lle F und t on
S t y E g neer

293 29

D O No S E 312

Encl 14

GRACE VILLE •PALACE ROAD

Bangalore (S Iidia) dated September 19, 1931

GENERAL SECRETARY.
21 SEP 1931
No 17249

GE 14415 SCTT
22 SEPT 193
L S G B

Dear Sir,

I have the pleasure to forward herewith a water supply scheme for Holenarsipur involving the use of Hydraulic Rams This scheme like several others has been delayed owing to lack of personnel in the Bureau to undertake such work The scheme while slightly in excess of the pumping scheme submitted previously is more desirable as it entails considerably less recurrent - charges It will be seen from the report that the success of the scheme will depend upon a continuous flow in the feeding channel As there is very little irrigation from this channel, I understand that it would not be difficult to arrange for this constant supply to the municipality

Sincerely yours,

J J Mieldazis,
ROCKEFELLER FOUNDATION SANITARY ENGINEER

H J Ramaswami, Esq , A , P L ,
General Secretary to
the Government of Mysore,
Bangalore

JJM mr - -

Appendix F G—1]

SUBJECT

29

Section Rel
File No 293-29
Serial No 5

Diary No of letter replied to 1445 L

No L 3153

To The Dy Commr.
Nasarn District.

Sir With reference to your letter No 1007-29 dy 11th March 1930 and in continuation of this Office letter No L1503-Rel 293-29-2 dy 16th Aug 1930, I am directed to request you to be so good as to furnish information on the following points.—

(1) What are the conditions on which the Rel. Comal Water to raise a loan for the Water Supply Scheme

General and Revenue Secretariat

( )

the 193

Date of issue 27/10

Signed by Mr V S Sastry

Re the Water Supply Scheme of Hole-Narsipur Town

List of enclosures

Copied by

Examined by

WD 71—GBPM—40 000—20 7 31

and (ii) How do they propose to repay the loan?

-- An early reply is requested.

I have etc.,

VS 23/10/31

for Gen. Secy to Govt

(Def)
Govt
23/10/31

Ml 293-29-6

C No C 87-87

Encls 2

OFFICE OF THE DEPUTY COMMISSIONER
HASSAN DISTRICT

Dated Hassan the 13th June 1932

5037

From

G B BELLIKAR, Esq , B A , LL B ,
Deputy Commissioner, Hassan District

To ,

R RANGA RAO, Esq , B A , B L ,
Secretary to Government, General Department,
Bangalore

GENERAL SECRETARY.
16 JUNE 1932
No.

Sir, Ml 16 SS 1612

Adverting to your letter No L 3155 Ml 293-29-5 dated the 27th October 1931, calling for some additional information regarding the Water Supply Scheme of the Holenarasipur Town, I have the honour to forward herewith copy of the proceedings of the Special Meeting of the Municipal Council held on 21-5-1932 It will be seen from the proceedings that the Council have carefully considered the question in all its aspects and have resolved (1) that the Government be moved to grant or to permit the Municipality to float a loan of Rs 60,000/- for water works (2) that they are prepared to pay interest up to 6% per annum (3) that the Government be requested to guarantee the interest and declare it free of incometax (4) that the Government be requested to pay their quota (viz , a moiety of the cost) as early as possible or by convenient instalments (5) that the Government grant be ear-marked either for repayment of the loan by a quinquennial drawing of the bonds by lot or for other items of permanent town improvement such as drainage works and (6) that a water tax be levied to repay the loan instalments though the surplus of the normal income over the normal expenditure is by itself sufficient to pay the loan instalments

2 Though the Holenarasipur Town is on the banks of a river there is great dearth of water at all times of the year as practically all the wells in the town contain brackish water and run dry in the hot weather the Municipal Council have been spending large sums of money on works of public utility during the past three years (e g , the construction of a

a High School Building at a cost of Rs 17,000/-) As it is a great weaving centre, it will grow apace if it is provided with cheap electric power and ample supply of pure water for domestic and other purposes As the former is almost assured, the supply of tap water is bound not only to be cheap but also give a great inducement to outside weavers to settle down and take to power looms It is also gratifying to note that the Municipal Council have decided to levy a watertax for the Water Supply Scheme and to utilize the Government grant for drainage and other similar works of public utility In these circumstances, I would strongly recommend that the Municipal Council be given a loan of Rs 6000 by Government at 6% per annum As the Government can raise a loan at a cheaper rate and the finances of the Municipality are in a fairly satisfactory condition the Government will be incurring no risk by granting the loan If however, Government consider that the Municipality should be allowed to raise the loan the same will have to be guaranteed by Government and declared free of Incometax The latter concession may be shown in view of the fact that the Municipal Council have requested the Government to pay their quota at their convenience Personally I think that the Government should themselves give the loan. As Holenarasipur is a commercial town, I think that the Municipality will be in a position to repay the instalments of the loan regularly

3 The resolution of the Municipal Council accompanies I would suggest that, if there is no objection, the Sanitary Bureau may be directed to prepare plans and estimates in the meanwhile

4 I solicit early orders in the matter

I have the honour to be,

Sir,

Your most obedient servant,

DEPUTY COMMISSIONER,

HASSAN DISTRICT

I S D

Extract from the proceedings of the Emergent Special Meeting of the Municipal Council, Holenarasipur Town Municipality held on 21-5-1932

---

x x x

Proposed by Mr B Venkatasamiah and seconded by Mr Madappa that the Council may be pleased to pass another resolution on the introduction of the water Supply Scheme in addition to the resolution already passed on 10-1-1932 and allowed by me

Resolved unanimously (1) th the Government be moved to grant th Municipality or to permit it to fl a loan of Rs 60,000/- for their Wate Works - repayable in 25 annual inst ments at a rate of interest not exc ing 6% per annum (according to mar conditions

2 That the Government be requested t guarantee the interest and to decl it free of incometax

3 That the Government be requested t pay their quota viz , the moiety o the cost of the entire works as ear as possible or by convenient insta ments, so that the Government grant may be utilised either for repaymen of the loan by quinquennial drawin bonds (by lot) or on another items permanent town improvement such as drainage works

4 Also resolved unanimously, that it may be pointed out to Government (1 that the normal income of the Munic pality exceeds its normal expendit by about Rs 4000/- to Rs 6000/- per annum (2) that the Council propose levy a water tax to repay the l and interest in 25 years so that t raising of the loan may not interr the other normal activities of the Municipality in the matter of prov ing the usual civic amenities and that the actual income and norm no expenditure for the 3 years is as follows -

Year	Actual income	Normal Expenditure
1929-30	33310- 2-10	26059- 0-3
1930-31	26941- 7- 2	22149-11-6
1931-32	27987- 2-10	21192- 0-6

5 That the Deputy Commissioner Sahib be requested to kindly make suitab recommendation to Government with strong and valuable support in the matter

==========

" C O P Y "

DEPUTY COMMISSIONER,

HASSAN DISTRICT

I S D 13-6-32

Extract from the proceedings of the Emergent Special adjourned meeting of the Town Municipal Council held on 10-1-1932

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(8) [illegible] Council [illegible] C 307-31 dt 7-11-31 [illegible]

[illegible] Water Supply Scheme [illegible] while introducing the scheme I propose to raise the loan on the following conditions —

(1) The Debenture loan is to be for Rs 60,000/- in bonds of Rs 25, 50, 100, 500 and 1000 and is to be guaranteed by the Government (2) the interest is to be paid at 6% per annum to be paid halfyearly, the loan to be free from Incometax (3) the loan to be repaid in 25 years (4) the Government will have to ~~pay~~ bear half the loan amount and the Government to pay to the Municipal revenues their annual quota towards the loan annually

They propose to repay the loan in the following ways They realise R 3600/- annually by imposing a flat water rate for 25 years (2) they hope t realise Rs 1000/- by private connections (3) the amount of Rs 4600 pointed out in (1)and (2) along with the Government's annual quota will be deposited separately for 25 years at the end of which the entire amount will be drawn from the deposit account and adjusted towards the loan (4) recurring expenditure will be met from Normal resources

==========

'COPY'

DEPUTY COMMISSIONER,
HASSAN DISTRICT

I & D 15-6-32

5787

REPLY

(To be written on this margin)

OFFICE OF THE SECOND MEMBER OF COUNCIL

NOTF

Dated 27th June 1932

-- How does the question of water supply to Holenarsipur stand? Please put up references

General Secretary
with compliments

References are put up Re the stage in which the question of water supply to Holenarasipur stands Kind attention is invited to the Deputy Commissioners (Hassan) letter of the 13th instant wherein he solicits orders to permit the Holenarasipur Municipal Council to float a loan of Rs 60,000 for Water Works under certain conditions noted therein

Submitted for favour of perusal

P & D

RECEIVED
27 JUN 1932
No 11059

1931-32 as per sometimes budget

Opening balance	5,720
Receipts	31,656
Total	37076
Expenditure	31 853
Closing balance	5,223

as per budget Estimate for 1932-33 now received

Cash balance on 1-7-1932	Rs 10,643
Cash in Ajmer Savings bank	488
(Investments)	
5% Govt of India Securities	- 3,000

Financial position of the Holenarasipur Municipality

1927-28

As per annual statement

Opening balance	5,922
Receipts	17,958
Total	23,880
Expenditure	19,295
Closing balance	4,585

1928-29

Opening balance	4,585
Receipts	29,877
Total	34,462
Expenditure	32,038
Closing balance	2,424

1929-30

Opening balance	2,425
Receipts	37,693
Total	40,118
Expenditure	31,215
Closing balance	8,903

1930-31

Opening balance	8,903
Receipts	28,899
Total	37,802
Expenditure	28,111
Closing balance	9,691

K 1-9

Appendix F G—1]

SUBJECT Holenarasipur - Water Supply Scheme

Section mil

File No 293-29

Serial No 7

Diary No of letter replied to L5037

No A 2329

To

The Deputy Commissioner

Hassan district

Hassan

Sir

With reference to correspondence ending with your letter no C307-31 dated 13th June 1932 requesting that the Holenarasipur rural may be permitted to float a loan of Rs 60,000/- in connection with the water supply scheme of Holenarasipur town, I am directed to state that if the Municipality is willing to and can float a loan and can wait for the receipt of the Government grant for such time as Government can afford to give it, there is no

General and Revenue Secretariat

(mil)

the *193*

Date of issue 23/9

Signed by Mr A V Rozario

List of enclosures

Copied by

Examined by

WD 71—GBPM—40 000—20 7 31

In general portion of the Honourable Premier

objection to the Council permitting to raise
a loan for financing the water supply
scheme. In the meanwhile, I am to
request you to ask the Board to submit
specific proposals in respect of the loan as
regards payment of interest, period of
repayment of loan, sinking fund, &c

Thanking &c

Yours &c

Secretary

For General Secretary

Secretary

A 2329
Rel 293-29-7

22nd September 1932
23

C B Peblikar, Esquire, B A , LL B ,
Deputy Commissioner, Hassan District

With reference to correspondence ending with your letter No C 307-31 dated the 13th June 1932 requesting that the Holenarsipur Municipal Council may be permitted to float a loan of Rs 60,000/- in connection with the water supply scheme of Holenarsipur Town, I am directed to state that if the Municipality is willing to and can float a loan and can wait for the receipt of the Government grant till such time as Government can afford to give it, there is no objection to its being permitted to raise a loan for financing the water supply Scheme In the meanwhile, I am to request you to ask the Municipal Council to submit specific proposals in respect of the loan as regards payment of interest, period of repayment of loan, sinking fund, etc

I have the honor to be,
S i r ,
Your most obedient servant,

Aswathappa
for General Secretary to Government

P M

Report to accompany the Hydraulic Ram Scheme for Water Supply to Holenarsipur

****

Previous History - 1 Holenarsipur town has a population of 1679 and is depending for its water supply on the South channel of Sree Ramadevara Anicut During non-cultivation season, the channel will be closed for repairs, and then, people will have to go to the river Hemavathi, which runs at a distance of about 1/2 a mile from the town During 1917 a pumping scheme from river was roughly worked out at a cost of Rs 60,000/- and submitted The cost of annual maintenance of such a pumping scheme was beyond the means of a small Municipality like Holenarsipur, and so, a ram scheme was considered cheaper and the following scheme is based upon this

Present proposal - 2 The present proposal is to provide a supply of 80000 gallons to a prospective population of 8000 at 10 gallons a head per day The source is the South Bank Channel of Sree Ramadevara Anicut which runs close to the town The Water level is 2747 00 in the channel, and the bed level 2743 00 From the channel a Cast Iron feed pipe of 12" diameter 693' long will have to be laid to feed water into an armoured concrete feed cistern of size 6'x4'x6' with water level at 2742 50 Thus, allowing 4 5 feet for frictional losses in the feed pipe Quantity of drive water required in gallons per minute is given as 850 gallons by Messrs Richardson and Cruddas

Hydraulic Rams 2 Drive pipes 9" C I 70' long - 3 Messrs Richardson and Cruddas have recommended two hydraulic rams, with two drive pipes of 9" cast iron 70' long each, ard provision has been made for them in the estimate

Ram and Filter House - 4 A filter ard ram house is provided for in the

the project as per plan enclosed Suitable filters for filtering 80000 gallons in 24 hours are proposed to be installed in the Ram House alone, on the pumping main A provision of Rs 12,000/- is made for these filters, for erection and pipe fittings complete

4" cast iron Rising Main

5 The required quantity of 80000 gallons in 24 hours or 56 gallons per minute are proposed to be pumped through a 4" cast iron pipe line, into a masonry service reservoir of 80000 gallons in 2 compartments, proposed to be built in the inside corner of Fort, near temple glacis

6 From here, a distribution is proposed through 5", 4", and 3" cast iron pipes, 2", 1½" and 1" galvanised iron mains and a number of public fountains at a cost of Rs 12,000/- The details of the Distribution System are not worked out, but the amount is based on the experience of similar distribution for other places Details will be worked out later on after knowing the views of the Municipality on this scheme and after consulting them in respect of the positions of public fountains The sum of Rs 12,000/- provided is quite adequate for a complete fairly good distribution

The total cost for this scheme comes to Rs 62,460/- including Rs 2,539/- of contingencies at 5% and establishment and tools and plant charges at 18% which comes to Rs 9,140/-

- 18 5 31

Executive Sanitary Engineer,
Bureau of Sanitary Engineering

BSE

18/9/87

Annual Maintenance charges for the Hydraulic Ram & Water Supply to Holenarsipur town.

No.	Brought Forward Nature of work	Unit	Rate	Quantity	Cost
	Establishment -				
1	One fitter	month	30	12	360
2	One cleaner	do	15	12	180
3	One lascar	do	12	12	144
				Total establishment	684
	Maintenance Charges -				
1	Repairs to plants & public fountains	L S			100
2	Allowance etc	do			300
				Total for maintenance	400
				Grand total	1084

Bangalore
7/8-31

Executive Sanitary Engineer,
Bureau of Sanitary Engineering
Bangalore

Carried over

Brought Forward

Carried over

Water Supply to [illegible] arrangement down

Hydraulic Ram Scheme

ب

Calculation Sheet –

1 Present population —— 6800

2 Prospective population —— 8000

3 Supply allowed per head per day 10 gallons

4 Total daily Supply required 80,000 gallons

5 Pumping by Hydraulic Ram for 24 hours

6 Discharge required = gallons per minute

as $\frac{80000}{24 \times 60} = \frac{500}{9} = 55\frac{1}{2}$ or, say 56 gallons

7 To discharge 56 gallons per minute a 3 inch pipe will be required

Hence a 4" G I main is used

8 Length of 4" G I rising main is 1935 Rft

9 Length of feed pipe from channel to feed cistern is 693 feet

10 Fall allowed is $4\frac{1}{2}$' as follows –

Fall of channel – 2,747 to

Water level in feed cistern = 2-42 59

head —— 45 feet

11 Discharge required in the feed pipe is 850 gallons per minute as given by Messrs Richardson & Cruddas Consulting

12 Length of feed pipe is 693'

Size of feed pipe required by Unwin's Formulae is $H = \frac{Q^2 L}{(3d)^5}$ where $H = 4\frac{1}{2}$' $Q = 850$

$L = \frac{693}{3} = 231$ Yards

$H = 4_2 = \frac{850^2 \times 645}{(3d)^5}$ $(3d)^5 = \frac{850^2 \times 231 \times 2}{0}$

$3d = \frac{80^2 \times 462}{9} = 326$

$d = \frac{326}{3} = 11'$

a 12' pipe line may be used

13 Drive pipe is proposed to be of 9' & 7 70 lbs each by Messrs Richardson & Cruddas Co

14 Service Reservoir – These are proposed of two compartments of Capacity 40,000 gal each with 8' depth of water

Size (30' × 26 × 8) interior clear dimensions

15 Jewel Type Pressure filters of filtering capacity 80,000 gallons in 24 hours are proposed

Diameter required – at 100 gallons per hour per 8ft, area required = $\frac{80000}{100 \times 24} = 33\frac{1}{3}$ or 34 sq ft

$\pi r^2 = 34$ sq ft

$\frac{22}{7} r^2 = 34$ sq ft $\quad r^2 = \frac{34 \times 7}{22} \quad \frac{119}{11} = 11$

$r = \sqrt{11} = 3.3166 \quad d = 6.63'$

or a 80" diameter filter is required

16 Storage tank – During non cultivation season the channel will be fed with water once a week (from local enquiry)

Water required for working Raw for 7 days will be $\frac{7 \times 24 \times 60 \times 850 \times 4}{25} = 1370880$ cft capacity 5 ft

17 Distribution in a moderate scale with 4" & 3" C.I. mains 2 & 1½" & 1" branch lines at cost Rs 12,000/-

17.9.31

Executive Sanitary Engineer,
Towards the Sanitary Engineering

16 R Rao
17.9.31

Abstract estimate for Water Supply to Hathras respecting town

No	Subhead	cost
	Brought Forward	
1	Conveying Laying & jointing a 12" & 9" steel pipe line as per estimate No I	4800
2	Constructing an air cooled concrete filter cistern of 6×4×6 — 2 Nos	250
3	Laying and jointing the Drive pipes of 9" & 3" (1000 lines) as per estimate No II	1250
4	Constructing a Ram and Filter Shed as per estimate No III	2250
5	Hydraulic Rams including delivery as per quotations of D'Lessee Richardson & Cruddas	5,100
6	Freight in respect of Erection of Hydraulic Rams	100
7	Filters Suitable to work with Hydraulic Rams with pipe connections & erection complete	12,000
8	Laying & jointing 4" & 6" Rising Mains as per estimate No IV	4000
9	Construct a Service Reservoir in three compartments of 40,000 gallons each	9031
10	Town distribution in a Graduated Scale	12000
	Total	50781
	Add 5% Contingencies	2539
	18% Establishment & Tools & Plant	9140
	Total estimate say Rs	62460

Executive Sanitary Engineer
Bureau of Sanitary Engineering

Engg. Sec.
17-9-31
M R Rao
17 9 31

Carried over

Brought Forward

Carried over

Estimate No I

Laying & jointing 12" C I Feed pipe for Water Supply

Mandrubipur town

No	Item of work	Unit	Rate	Quantity	Cost
	Brought Forward				
	Materials				
	12' C I turned & bored pipes of 12' length each with 1 1/2" broad socketed Feed pipe - 693 Rd @ 8 cwt 1 Qrs 6 lbs = $\frac{693}{12} \times \frac{930}{112}$ - 495 cwts	cwt	8 -	495	3960
2	12 C I Sluice Valve with tail piece bolts & nuts and Hand wheel	Each	351 - -	1	351
3	12' C I Spare collars		18 -	2	36
4	2 1/2' x 2 1/2' Valve cistern covers with angle iron frame to wrought iron Shutters, Locking arrangements &c, complete	Each	25	1	25
	Total cost of materials				4372
	Labour charges				
1	Earthwork excavating & refilling pipe trench for 12 C I Feed pipe $\frac{213}{3} \times \frac{3}{3} \times \frac{7}{3}$ (average) = 166 $\frac{480}{3} \times \frac{3}{3} \times \frac{3}{3} = \frac{160}{326}$ Total - 326 cu	cyd	- 5 3	326	179
2	Conveying, laying & lead or flange jointing 12' C I pipe & Specials including cuts & collar joints	Each	5	10	50
	Carried over				

	Brought Forward					12 - -
3	Conveying and laying 12" C I pipes and Specials and Cement ring including cuts & collar joints	Each	2	4	60	13 5
4	Fixing Valve cisterns Covers & Constructing cisterns etc, complete	Each	25	-	1	2 -
5	Unforeseen items and Conveyance of materials	-	L	S		10 9
					Total cost of Labour charges	428
					Grand total ~~L S~~	4800 -

Executive Sanitary Engineer,
Bureau of Sanitary Eng. etc.

Carried over

Estimate No II

Laying & jointing 9" C I Drive pipe (Double line) Water Supply to Hotenbarsipur Town

	Items of work	Unit	Rate	Quantity	Cost
	Materials				
1	9" C I socked and spigot tubes of 12' length each in double line with 10 ft broad, Socketted Drive pipe 2×70-140 Rft @ 5 cwts 2 Qrs 9 lbs per pipe = $\frac{140}{12} \times \frac{625}{112}$ 65 10 cwts	cwt	8 -	65 10	521
2	9" C I Sluice valve with spindle, keys & nuts & hand wheel	Each	198 -	2	396
3	9" C I Spare Collars	"	18 -	2	36
4	2½ × 2½' valve cistern Covers with angle iron frame & wrought iron shutters, locking arrangements etc complete	Each	25 -	2	50
	Total cost of Materials				1003
	Labour charges				
1	Earthwork excavating & refilling pipe trench for 9" C I Drive pipe $\frac{2 \times 70}{3} \times \frac{3}{3} \times \frac{3}{2}$ 4 ~ cyd	cyd	54	47	16
	Carried over				16

	Brought Forward					6
2	Connecting, laying & lead or flange joining a CI pipes and sockets including cuts and collar joints	Each	4		30	1 20
4	Fixing valve casings covers etc & constructing casings, complete —	Each	25	-	2	5 -
5	Unforeseen items and conveyance of materials	£	1			6 1
	Total cost of above charges					2 4 -
	Grand total ~~£~~					12 10

12/11

Executive Sanitary Engineer,
Bureau of Sanitary Engineering

Carried over

Estimate No III

[W General 80] PUBLIC WORKS DEPARTMENT DIVISION

DETAIL ESTIMATE FOR Constructing a Rain & filter Shed for water Supply to Talaivarisuvo Hospital

WD 020—GPB—6 000—31-8-28

Item No	Description of Work	No	Measurement L	B	D	Contents	Total
1	Earthwork excavating foundation						
	Walls around	1	80 1/2	2 1/2	3	604	
	Rear wall of verandah	1	11	2 1/2	3	83	
	West wall of do	1	4 1/2	2 1/2	3	34	
	Step	1	10	1	1/2	5	
		Total			cft	726	27 cyd
2	Earthfilling in basement with watering & ramping with available earth						
	Room - across	1	18 5/8	11 5/8	2/3	144	
	- do - wise	1	7 5/8	7	2/3	37	
	Verandah	1	7 1/2	5 3/12	2/3	27	
		Total			cft	208	8 cyd
3	Concrete in Concrete						
	Walls around	1	80 1/2	2 1/2	1	201	
	Rear wall of verandah	1	11	2 1/2	1	28	
	West wall of - do -	1	4 1/2	2 1/2	1	11	
	Step	1	10	1	1/2	5	
		Total			cft		245
4	Stone in Concrete for filling foundation and basement						
	Foundation - Walls around	1	80 1/2	2	1/2	242	

					242
Rear wall of verandah	1	11	2	1½	33
West wall of – do –	1	5	2	1½	15
Basement - Walls abroud	1	80½	1½	1/2	181
Rear wall of verandah	1	11	1½	1½	25
West wall of – do –	1	5½	1½	1½	12
		Total			508
Deductions					
Sill Slab of door	1	9	1½	1/2	7
Slab over retaining wall of verandah	1	9 7/8	1½	1/2	7
		Total			14
Balance Stone in chunam in cft					494
Burnt brick in clay Superstructure					
Main room walls abroud	1	66½	1/8	14 5/8	1094
gable walls	2	13/8	1/8	13 1/8 / 6	65
Cross walls of wing room + verandah	3	7	1 1/8	9 5/8 + 7 / 2	201
Front wall of verandah	1	8	1/8	7½	68
		Total			1428
Deductions					
Door	1	8	1/8	8	72
Windows	8	2½	1/8	5½	173
Ventilators	4	3		1½	18
Circular ventilators	2	22/7 × 2²/4		1 1/8	7
Arch work over ventilators	2	22/7 × 3/8 × 1/8		1/8	25
Opening of wing room	1	8	1/8	8	72
Lintal over wing room	1	9½	1 1/8	1/2	5
Sills + lintals of windows	8×2	5	1 1/8	1/2	45
				C E	417

DETAIL ESTIMATE FOR

WD 020—GPB—6 000—31 8-28

Item No	Description of work	No	Measurement L	B	D	Contents	Total
			Br	Fr		417	
	Sills & Tentals of Ventilators	4×2	4	1 8	2	18	
	Burnt brickwork in chunam.						
	Sides of windows	8×2	1 8	1 1/8	5 1/2	111	
	— do — of Ventilators	4×2	1 8	1 1/8	2	20	
	— do — of doors	2	1 1/8	1 1/8	8	20	
	Top of long walls	3	2 1/4	1 1/8	1	72	
	— do — of gables	2×2	7	1 1/8	1	32	
	— do — of Crosswalled verandah	3	7	1 1/8	1	23	
	— do — front wall of wing room	1	8	1 1/8	1	9	
				Total deduction		722	
				Balance Br Brickwork in cft			706
7	Burnt brick arch work in chunam as per deduction in item no 5						25 cft
6	Burnt brick in chunam as per deduction in item no 6						87 cft
8	6" Burnt Stone Slabs dressed & fixed as per twice the deduction in item nos 4 & 5		(68 + 14) × 2			164	
	Step	1	10	1	-	10	
				Total burnt Stone Slabs in cft			174

9	Teakwood work in Purlins							
	Couple rafters 2½ c to c	2×1	10/3	1/4	5/12	26 11		
	Collars ———	11	10,3	1/4	5/12	13 06		
	N-all plates ———	3	24 1/4	1/3	1/4	6 06		
	—— Do —— ——	1	1'	1/3	1/4	0 91		
	Transommer of verandah	1	4	1/3	1/2	0 66		
	—— Do ——	1	2 1/2	1/3	1/2	0 41		
	Verandah rafters 2½ c to c	8	9 2/12	2 2/12	5/12	6 59		
	Valley rafters	2	11	1/4	1/2	2 75		
	Jack rafters	4	9 1/2 / 2	2 2/12	5/12	1 64		
	Front gable Ridge piece	1	9	1/4	1/2	1 12		
	Jack rafters	3×2	6/2	2 2/12"	5/12	1 56		
				Total	cu	eft —		60 87
10	Rolled steel joists over doorways and openings, room opening 3×6" joists	4	8 @ 12 lbs per foot			384		
				Total	cu	cwts		3 42
11	9'×9'×9' Cut Stone bases for pillars of verandah including dressing and fixing etc, complete -	2	-			2		
				Total		Nos		2
12	4'×4" Teakwood pillars with wooden capitals as per design including fittings for fixing down bolts etc, complete	-	-	-		2	Nos	

PW General 80] PUBLIC WORKS DEPARTMENT DIVISION

DETAIL ESTIMATE FOR

WD 020—GPB—6 000—31-6-28

Item No	Description of Work	No	Measurement L	Measurement L	Measurement D	Contents	Total
13	Teakwood battened doors with iron strap hinges bolts, locking arrangements and lock & key & shoot bolts etc, complete		8		8	64	
				Total		in Sft	64
14	Teakwood battened windows with iron bars in the middle including iron fittings etc, complete	8	3½		5½	154	
				Total		in Sft	154
15	Teakwood glazed ventilators with iron fittings etc, complete	4	3		½	18	
				Total		in Sft	18
16	Teakwood circular ventilators with glazed shutters & fittings & etc complete	2	22/7	× 2²/4	-	628	
				Total		in Sft	628
17	Roofing with 1st class Mangalore tiles on 2×1 teak battens & nails etc complete including timber	1×2	24	11	-	534	
						534	

				Do	7'-	534
	Verandah roof	1	$\frac{16\frac{1}{2}+11\frac{1}{2}}{2}$		$9\frac{1}{2}$	133
	— do — do —	1	$\frac{7\frac{1}{2}+2}{2}$		$9\frac{1}{2}$	45
	Front gable	2	9	$\frac{6+0}{2}$		54
					Total in Square	766
18	Hongabare Ridge tiles fixed in Lime mortar					
	Verandah bldng —	1	24	-	-	24
	Front gable Ridge	1	9	-	-	9
					Total in Rft	33
19	Providing planishing Sheet for valleys of front gable on 2" × 1" battens + nails etc —	2	11	$1\frac{1}{2}$		33
					Total in Sft	33
20	Flooring with Cuddapa Slabs on 3" concrete bed + joints pointed with Cement mortar —					
	Verandah bldng —	1	19	12		228
	" Wing Room —	1	8	7		56
	" Verandah —	1	$9\frac{7}{8}$	$5\frac{1}{2}$		54
					Total in Squares	338
21	Plastering with Chunam mortar					
	Verandah bldng abound	1	62	-	15	930
	gables —	2	12		12	48
					C C	978

P W General 80] PUBLIC WORKS DEPARTMENT DIVISION

DETAIL ESTIMATE FOR

WD 020—GPH—6 000—31-6-28

Item No	Description of Work	No	Measurement L	B	D	Contents	Total
			Cb	x		978	
	Cross walls of verandah	4	7	-	8½	238	
	Rear wall of — do —	1	9⅞		9⅝	97	
	Front wall of wing room	1	8		7⅙	57	
	Exterior - Front wall of wing Room	1	10⅜		7⅙	73	
	Front face of verandah Eastern wall	1	1⅜		⅙	8	
	End walls of verandah & wing rooms	2	7		8+9⅝ / 2	119	
	End walls of mandbuilding	2	14⅜		14¼	406	
	- ing gable of do	2	14⅜		14½ / 6	68	
	Rear wall of mandbuilding	1	21¼		14¼	303	
	Front wall of — do — above verandah roof	1	21¼		4¼	90	
		Total				2437	
	Deductions						
	Door	1	8		8	64	
	Opening of wing room	1	8		8	64	
	Windows	8	3½		5½	154	
	Ventilators	4	3		1½	18	
	Circular ventilators	2	22/7	x 2²/4		6	
	Cement plastering as per item no 22					66	
		Total deductions				372	

Balance plastering in Squares 206

22	Plastering with Cement mortar 3 ado of walls round shewing Room where Hydraulic Ram is proposed to be fixed	1	22		3	66	
					Total in Square		0 66
23	Pointing with Cement mortar basement abound	1	86½		1¼	108	
					Total in Squares		1 08
24	White & Colourwashing as per plastering shew in Sqrs						2066
25	Painting with Hydraulic Silicate Chocolate paint -						
	Battened door	1X2½	8		8	160	
	Battened windows with bars	8X3	3½		5½	462	
	Glazed Ventilators	4X1	3		1½	18	
	20 in Circular Ventilators	2X1	22/7	X 2²/4		6	
					Total in Squares		646
26	Chinnam boarder over Coping						
	2 arm lengths along	2X2	10			40	
	Over verandah	2	9	-		18	
	& front gable	2	6	-		12	
					Total in Rft		70
27	Making ornamental chinnam borders round the windows & Ventilators				L S		Rs 10/—
28	Recording Cement mortar drain at Valleys & front gable Plastering &c	2	11	-	-	22	
					Total	Rft	22

[W General 80] PUBLIC WORKS DEPARTMENT DIVISION

DETAIL ESTIMATE FOR

WD 020—GPB—6 000—31-8-28

Item No	Description of Work	No	Measurement L	B	D	Contents	Total
29	Recording Cement mortar fillet where the top of front verandah roof rows the wall	1	21/4			21	
					Total in Rft		21
30	Teakwood ornamental Eaveboard with painting & fixing etc complete						
	Front & Rear of main building	2	24 1/2	-		49	
	Gables	2×2	10 1/4	-		41	
	Verandah	1	13 1/2	-		14	
	Front gables	1×2	6			12	
	Ends of verandah	2	9 1/2	-	-	19	
				Total	in Rft		135
31	Teakwood barge board to front gable including painting	1	10		1 1/2	15	
					Total in Square		15
32	Recording pendants (TW)	8	-	-	-	8	No 8
33	— do — finials (TW)	3	-	-		8	No 3
34	Tarring the woodwork in contact with masonry wherever necessary		2	5	-		Rate

25	Levelled a piece of land & clear'd up Sides		2	8		£0	13/-

Estimate No III

Estimate for Construction of a Ram & feller shed for Water Supply to Halenarabepura Town.

51

No	Item of work	Unit	Rate	Quantity	cost
	Brought Forward				
1	Earthwork excavating foundation	c/d	- 4	27	6
2	Earthfilling in basement with watering & stamping with available earth	c/d	- 2	8	1
3	1:2:4 Chunam concrete	c/f	- 4 6	245	69
4	Stone in chunam	c/f	- 5	494	124
5	Burnt brick in clay	"	4	706	177
6	—do— in chunam	"	- 5 6	287	99
7	Burnt brick arch work in Chunam		8	26	13
8	6" Burnt Stone Slabs dressed & fixed	S/f	12	174	131
9	Teakwood work wrought & put up	c/ft	5 -	60 87	304
10	Rolled Steel joists	cwt	8 -	342	27
11	9"x7"x9" Cut Stone bases for pillars of verandah including dressing & fixing etc complete	Each	2 -	2	4
12	4"x4" Teakwood pillar with wooden capitals as per design including fittings, holding down bolts etc complete	"	8	2	16
13	Teakwood battened doors with iron Strap hinges bolts lock - ing arrangements & lock & key & tower bolts etc complete	S/f	1 8	64	91
14	Teakwood battened windows with iron bars in the middle including iron fittings etc, complete	S/f	2 -	54	8
	Carried over				1305

	Brought Forward						137
15	Teakwood Glazed Ventilators with iron fittings etc, complete	Sft	1	2	18		20
16	Teakwood Circular Ventilators with glazed Shutters & fittings etc, complete	Sft	1	6	6 28		9
17	Roofing with 1st Class Mangalore tiles on 2"x1 teak Reepers, nails etc, complete	Sqr	35	-	7 66		26
18	Mangalore Ridge tiles fixed in Lime mortar	Rft		12	33		25
19	Providing Iclam 22ne Sheet for Valleys on 2'x1 teak Reepers & nails etc, complete	Sft	1	-	33		33
20	Flooring with Cuddapa Slabs on 3" concrete bed & joints pointed with cement mortar	Sqr	35	-	3 38		118
21	Plastering with Chunam mortar	Sqr	3	8	20 66		72
22	— Do — with Cement mortar	"	10	-	0 66		7
23	Pointing with Chunam mortar		2	8	1 08		3
24	White & Colourwashing			5	- 20 65		103
25	Painting with Oil bound Chocolate paint	Sqr	3	8	6 46		23
26	Chunam border over Roof	Rft	-	4	70		18
27	Making Ornamental borders to all the windows & ventilators	L. S			—		10
	Carried over						208

	Brought Forward					2084
28	Providing Cement mortar drain at valleys of front gable roof & cement plastering at sides	Rft		8	22	11
29	Providing Cement mortar fillet	Rft		4	21	5
30	Teakwood ornamental cornice board with painting etc, complete	Rft	-	12	135	101
31	Teakwood barge board including painting & fixing	Rft	-	6	15	6
32	Providing teakwood pendants	Each	-	12	8	6
33	do finials	"	3	-	3	9
34	Tarring the woodwork in contact with masonry		2		8	5
35	Levelling ground and clearing Site		2	3		23
	Total					2250
	Add 5% contingencies					115
	Grand total					2365

Executive Sanitary Engineer,
Bureau of Sanitary Engineering

Carried over

Brought Forward

Carried over

Estimate No IV

Estimate of probable cost of laying and jointing the 4" G.I. Main from Water Supply to Halewarapur Town

Brought Forward

No.	Items of work	Unit	Rate	Quantity	cost
	Materials				
1	4" G.I. Turned & bored pipes 12' long with 10½" broad Socketted $\frac{19''5}{12}$ = 161 tubes @ 2 nuts each pipe 322	nut	8 - -	322	2576
2	4" G.I. Sluice Valve with dual piece	Each	65	1	65
3	4" G.I. Refluse valve - do -	"	65 -	1	65
4	4" G.I. Bends ÷	"	9 -	4	36
5	4" G.I. Spare collars	"	6 -	4	24
6	2½' × 2½' flap Shutters of W.I. with angle iron frame for valve customs	"	25 -	2	50
7	Keys for operating valves	"	4 - -	2	8
	Total cost of materials				2824
	Labour charges				
1	Earthwork excavation & refilling the pipe trench - $\frac{1935}{2} \times \frac{3}{3} \times \frac{3}{3}$	cyd	54	645	215
2	Conveying, laying, lead or flange jointing 4" G.I. pipes & Specials	Each	2 15	40	88
3	—do— cement joints	"	1 1 -	175	186
4	Constructing valve customs		25	2	50
5	Constructing pipe Supports	L.S.			4 50
6	Fencing valve customcovers	Each	25	2	50
7	Conveyance of materials & unforeseen items such as repairs to roads etc	L.S.			137
	Total cost of Labour charges				1176
	Grand total				4000/-

Carried over

Executive Sanitary Engineer

Bureau of Sanitary Engineer

Brought Forward

Carried over

Estimate No V

W General 80} PUBLIC WORKS DEPARTMENT DIVISION 7.

DETAIL ESTIMATE FOR Constructing a Service Reservoir of 80000 gallons Capacity for Hale Barrapur Water Supply

WD 020—GPB—6,000—31 6-28

Item No	Description of Work	No	Measurement L	B	D	Contents	Total
1	Brickwork in cement mortar headwall) gravel						
	Bed of Service Reservoirs	1	67	41	$2\frac{1}{2}+\frac{3}{2}$	7334	
	Extra for Pillars	2×3	$\frac{3}{2}$	$3\frac{1}{2}$	$1\frac{1}{2}$	110	
	Do for Beams pilo	2	6	6	1	72	
	Valve curbs mortar	2	3	5	3	150	
	Do Beams	2	5	5	$5\frac{1}{4}$	262	
	Total —					8148 cft	@ 302 Cyds
2	Stone jelly & Surkhi mortar Concrete						
	Bed of Service Reservoirs	1	67	41	$1\frac{1}{2}$	4121	
	Extra for Pillars	2×3	$3\frac{1}{2}$	$3\frac{1}{2}$	$1\frac{1}{2}$	110	
	Do for Beams pilo	2×2	6	6	1	72	
	Value curbs mortar of Beams	(2×2)	5	5	$\frac{3}{4}$	72	
	Total —					4379	
	Deduction for Pillars						
	Leaves	2×2	$2\frac{5}{8}$	$2\frac{5}{8}$	$1\frac{1}{2}$	62	
	Beams pilo	2	3	3	1	18	
	Total deduction					80	
	Balance Stone in jelly & Surkhi Concrete						@ 4299
3	Cement Pluster Surkhi mortar —						
	Wall all Round the Reservoir	1	178	$1\frac{1}{2}$	8	2136	
	Do Pillars	1	196	$\frac{0+3}{2}$	8	2352	
	Do Recessed Arches	1	178	$1\frac{1}{2}$	$1\frac{1}{2}$	401	

Do Lab parapet	1	178	1½	1½	401	
Centrál wall	1	30	1½+6/2	8	900	
Do lab Vestibul	1	30	1½	1½	67	
Pillars	2×3	2¼	2¼	7½	288	
Pillars basement	2×3	9 5/8	2 5/8	1½	62	
Arches with mold	2	15	3¼	3½	79	
Do — Scons	2	15	3/4	5¼	112	
Pillars at Corners of Vestibules	4×8	3/4	3/4	1¼	18	
Total	—	—	—	—	6762	
Deductions						
Stone templates under lug girders	3×3	½	½	½	10	
Do under joists	15×2	½	½	½	34	
Total —	—	—	—	—	44	
Balance Quant. Circuit in Curtain masonry —					—	6718 ✓
Burnt Stone Circular 4 4½ 6" Courses						
Iron bar dressed of Vestibule Curtain						
masonry in parapets —						
Iron Pillars	4×2	2 4	2 4	(6")	61	
Templates	39	1½	1½	(6)	88	
Courses of Circular ones in last course	2	15	1¼	(4½")	38	
Do — Scons	2	15	1¼	(4½")	37	
Total in Sq ft	Sq ft	—	—	—	224	224 ✓
Rolled Steel Girders & Joists —						
Main Hall girders 9×4 21.5 lbs	3×2×29/12			×21.5	33	
do Joists 4 C I C	15×32×12 lbs / 112				52	
Total in Cwts	—	—	—	—	85	85 ✓
Arches Springing Joists &						
Girders in parapets. —	—	—	—	—	Cwts	85 ✓

W General 80] PUBLIC WORKS DEPARTMENT DIVISION

DETAIL ESTIMATE FOR

WD 020—GPB—6 000—31-6-28

Item No	Description of work	No	Measurement L	B	D	Contents	Total
	Roofing with jack arches	1	32	68	—	1856	
	Deductions for Roof ventilators	4+2	1½	1½	—	18	
	Roof ventilators	2	3	3	—	18	
	Total deductions					36	
	Balance Roofing with jack arches in Sq.ft.					—	18 20 Sq.ft.
8	Cornice all round	1	188	(12")	-	188	188
9	Ventilators panels F.G.S. wire gauze fixed in mould Steel frame put in position	8+4	1½	—	1	48	48 Sft
10	Roofing over & coping on Roof vent. ladders with terrace brackets & 2 Hooks Cuddapha Slabs	8	3½	3½	—	98	0 98 Sq.ft.
11	Plastering with Surkhi mortar outside Terrace Parapet all round	1	196	—	10	1960	
	Parapet sides & top	1	178	—	4½	801	
	Roof vent. ladders all round	8	12	—	1	96	
	Do top	8	4	4	—	128	
	Volute corbels mlb & scons	4	18	—	1	72	
	Total in Sq.ft.		—	—	—	3057	30 57
12	White & colour washing as per above — Total in Sq.ft.		—	—	—	—	30 57

13	Comm^{t} plastering inside ½ Brick						
	Bed of Service Reservoirs	2	30	25	—	1500	
	In side walls aboved	2	112¼	—	9½	2133	
	Extra for balks walls	2	30	—	½	30	
	Pillars aboved	6	9	—	8½	459	
	Value carried inlet of Recess	4	12	3½+5½ / 2	—	210	
	Sides of Recess Jutt	2	12	—	1	24	
	Iron of value carried	4	3	—	3	36	
	Total					4392	
	Deduct for pillars spaces	6	2¼	2½	—	30	
	Balance Comm^{t} plastering ½ Brick m Sq Yds						43 62 ✓
14	Cullicy grows in Inlets and Iron mantles of value carried from wth balks & c^{c} Complete	4	—	—	—	4	
	Total No^{s}	—	—	—	—		4 ✓
15	Iron vent way from 3×3 on Roof of Services Reservoirs	5	—	—	—	2	
	Total No^{s}	—	—	—	—		10 ✓
16	Iron ladder 12 long with Iron arrangement to cullicy and of Inclined 1 from edge of vent, Complete with balks & rods Iron	25	—	—	—	2	
	Total No^{s}	—	—	—	—		50 ✓
17	2½ × 2½ C.S. framed & Cap sheetes for Caps of value carried	2×2	—	—	—	4	
	Total No^{s}	—	—	—	—		12 4

General 80] PUBLIC WORKS DEPARTMENT DIVISION

DETAIL ESTIMATE FOR

WD 020—GPB—6,000—31-8-28

Item No	Description of Work	No	Measurement L	B	D	Contents	Total
18	3×3 do for Top of Service Reservoirs	2	—	—	—	2	
	Total Rs	—	—	—	—	—	2 ✓
19	Three Iron valve Chambers including Ladders	8	—	—	—	8	
	Total Rs	—	—	—	—	—	8 ✓
20	Strong Cement concrete Arches round the Service Reservoirs	1	300	—	—	300	
	Total Rs	—	—	—	—	—	300 ✓
21	Filling in & consolidating earth round the Valve Chamber & the Service Reservoirs & Strong Steel bank & the remaining earth	L S			Rs	60	Rs 50 ✓
22	Pipe & Valves —						
	5" C.I. flanged pipes for main & Scours	(446)	@ 1	95 cubs		195	195 cubs
	5" C.I. Air flow pipes	(20)	3 length	1×0.66 cubs		132	132 cubs
	5" C.I. flanged ¼ bend	1	3 cubs	1 ¼ Bag		1 cubs	1 cubs
	5" C.I. flanged Tee	1	(1 cubs	1 cubs	¼	1¼ cubs	1¼ cubs
	5" C.I. Sluice valves	4	—	—	—	4	Rs 4
	Labour charges —						
	Earth work in excavation & refilling of Trenches in all kinds	1	3	3	—	324	✓

	Seven Sons	2	21	3	3 1/2	441	
	Lead off drains for overflow	2	100	2	1	600	
	Total in Cft					1365	
						Cubic yard	61 1 -
94	Conveying stone to site, Laying, & upon Village, and to Sub Sills and Sons, bolts & nuts &c complete 2 & 5" pieces & Specials - -	15	-	-		1/-	
	Total No.	-	-	-		- - -	15 /
95	Conveyance of pieces & Materials	Lump Sum				1/10	100 / -

Estimate of the Construction of Terraces Reservoirs &
200 gallons Capacity for the supply of Hotel with
Water

No	Items of works	Units	Rate	Quantity	Cost
	Brought Forward				
1	Earthwork excavation in hard gravel	Cyds	6	303	113 ✓
2	Stone pitching & Surface, as also Concrete	Sft	6	4299	1612 ✓
3	Turf Work in Surfacing as also	Sft	6	6718	2729 ✓
4	Cement Coloured Slabs 4" to 6" thick 2 Lbs dressed & Setting Surface as also in Reservoir	Sft	12	224	168 ✓
5	Rolled Gravel Garden & Footpath	Cwts	8	85	680 ✓
6	Hauling & Spreading Footpath & Garden in Reservoir	Cwts	1	85	85 ✓
7	Roofing with Jack arches	Sqrs	50	18 20	910 ✓
8	Fascia 12"	Rft	1	188	188 ✓
9	1/2 Slate Panels & 8 wire Range & Expand. wall with Steel Stem and Net in Reservoir	Sft	2	48	96 ✓
10	Roofing over & Casing on Roof with Slate Counter & 3" Mesh in Asphalt Slates	Sqrs	30	6 98	29 ✓
11	Plastering with Surface mortar	Sqrs	5	30 57	153 ✓
12	Asphalt & Coloured Painting	Sqrs	8	30 57	15 ✓
13	1½" Mesh Cement Plastering	Sqrs	19	43 62	829 ✓
14	Iron Stone in Slabs & Stepping in Slates & Valves & Valves with Walls & Concrete	Nr	5	4	20 ✓
15	Fencing Gateway & Stone 3 x 3 on Roof & Service Reservoir	Nr	5	2	10 ✓

Carried over

	Brought Forward						
16	Iron ladders 12 long with offsets arranged widths and at distance 1' from edge of vert complete with bolts & nuts & offsets	No	25	-	-	2	50 ✓
17	9 x 2 CI channel 25 & flep Shelves for top & value column	No	32	-	-	4	128 ✓
18	3 x 3 Br for top 25 Reservoirs	No	40	-	-	2	80 ✓
19	Iron hand rails & ornamental duq offsets - - - - -	Yds	2	-	-	8	16 ✓
20	Forming & cement Concrete drains - - - - - -	Cft	1	-	-	300	300 ✓
21	Filling in & consolidating earth round in value column of Service Reservoirs & forming short drains & removing earth	Yd	8			80	50 ✓
22	Pipes & materials — 5 CI flanged pipes for inlet & Scour - - - - -	each	11	8	-	19 5	225 ✓
	4" CI curved pipes	Do	11	8	-	1 32	15 ✓
	5' CI flanged 1/4 bend	Do	16	-	-	1	16 ✓
	5" CI flanged tee	Do	16	-	-	1/4	20 ✓
	5' CI sluice valves	No	80	-	-	4	320 ✓
23	Labour charges — Earth work excavating, refilling & forming pipe trenches in cyds	cyds	-	8	-	61	25 ✓
							8882 ✓

Carried over

						8887 ✓
	Brought Forward					
24	Conveying stone Blocks laying, pointing & plunged jambing with Rubble & obtaining Sand & make de Complete	190	3	4	6	15	49 ✓
25	Conveyance of steps and materials	L. S				Sum	100 ✓
	Total	Nil					9031 ✓
	Grand Total	Nil					9031 ✓

Executive Sanitary Engineer
Bureau of Sanitary Engineering

Carried over

Brought Forward

Carried over